

REMARKS/ARGUMENTS

Applicant responds herein to the Office Action dated November 12, 2008. A Petition for Extension of Time (one month) and the fee therefor are submitted herewith.

Preliminarily, applicant notes the objection to the drawings and, specifically, the request that a drawing be supplied which shows the means for detecting the transmission/reception state of the process and means for performing the hand-over process based on the difference of the transmission reception state of each of the antennas.

It is believed, and respectfully submitted, that the basic notion of testing a signal intensity or quality (e.g., the error rate of the data packets being transmitted) is so well known in the art that it does not require specific description. In the electronic art, measuring signal intensity (magnitude) or bit error rate is as basic as measuring the temperature or strength of a material in the mechanical arts.

Therefore, applicant submits that, with the additional Fig. 2A herein and the brief reference thereof, the objection to the drawings should be withdrawn.

The foregoing remarks are equally applicable to the rejection of claims 23-40 under the first paragraph of 35 U.S.C. §112. The notion of what the term “state” means in the context of the present invention should not be questioned as being either indefinite or vague. The term “state” of the antenna signals can refer, in the most obvious form thereof, to the signal strength, as clearly described in the specification which speaks of the issue of zones where no signal at all is sensed, or where the signals for the two or more antennas are compared and the comparison is clearly described in terms of the signal strength. In addition, the specification refers to the “state” as referring to the quality of the signals, for example, its error rate or the frequency or bandwidth utilization efficiency. See paragraphs [0007] and [0008] of the instant specification. See, also, paragraphs [0031], [0032], etc. In fact, the original version of claim 1 speaks of the radio wave intensity becoming a maximum. Therefore, the original specification fully supports and defines the term “state”, as used in the instant claims. A synonym of “state” as used here is the term “condition”, now used in the claims. Reconsideration and withdrawal of the rejection under 35 U.S.C. §112 is, therefore, respectfully solicited.

Substantively, claims 23-40 are stated to be obvious over Furukawa (6,108,548), in view of Cvetkovic (6,236,844). Reconsideration is requested in view of the amendments to the claims herein and the following remarks.

Moving platforms, in the form of either fast moving trains or automobiles or even large ships, present special problems, as discussed in the introductory pages of the instant application.

At the same time, such vehicles, as discovered by the instant applicant, afford the possibility of positioning several antennas in spaced relations to one another. In the instant claims, the antennas are spaced sufficiently apart that they enable discerning measurable differences in the signal intensity or quality received from a particular base station, based on the antenna's relative locations on the vehicle. The invention utilizes this aspect to form a more streamlined, soft hand-over process which solves several problems of the prior art, including the situation with dead zone regions, or any delay in handing over the mobile station from one base station to another.

Thus, independent claim 23 is directed to a mobile device having wireless antennas. Specifically, there are "two or more antennas installed spacially apart, such that the base station of which radio wave intensity becomes a maximum differs antenna by antenna, where the mobile device is located in the vicinity of a boundary of wireless areas".

Claim 1 further includes a facility which simultaneously utilizes the two antennas to simultaneously communicate with a plural number of base stations and a detector detects a transmission/reception "state" or condition of each antenna and, based on the state of transmission/reception which can be the "radio wave intensity", and engages in a hand-over process based upon a difference of the state of each of the antennas.

The basic functionality of a hand-over process is well known in the industry and did not require any specific teaching in the present application.

Turning the references, it is respectfully submitted that nothing in the primary Furukawa reference teaches spaced antennas operable with a facility which uses the signals from the two antennas to determine the precise point of switching a mobile device between two base stations. Rather, the two antennas in this primary reference are simply used to save time in the hand-over process by engaging a downstream base station and preparing the two systems for the point

where a switchover will occur. But no signal intensity or signal quality are being tested with the two antennas to determine the spacial point where such a switchover should take place. When read and understood in the context of its true teachings, this reference does not provide any teaching which go to the heart of the concept of the various systems and methods recited by the claims of the present application.

The secondary Cvetkovic reference addresses a specific problem which ensues from poor reception of signals which sometimes result from phenomena such as "short time delay multi-path", and "long time delay multi-path" which can result in signals that are difficult to read.

Cvetkovic teaches that by using two spaced apart antennas, the quality of the signal can be improved by, in effect, subtracting from them the undesired reflective signals or the signal artifacts. But, again, this reference, like the primary Furukawa reference, does not teach a system or methodology which enables the finding of the precise spacial location of switching over from one base station to another based, in effect, on the use of spaced apart antennas which provide far more accurate measures of the relative position of the mobile device relative to the base stations.

Accordingly, it is believed and respectfully submitted that the independent claims clearly define subject matter which is not taught or even rendered obvious by any of the references of record, nor by their combined teachings.

The dependent claims in the application all include the limitations of their base claims and impose further limitations thereon. As such, these dependent claims are distanced even farther from the prior art and are clearly patentable.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

Respectfully submitted,

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